

AMENDMENT

In the specification

On page 7, kindly replace the equation beginning at line 13 with the following formula:

EQ. 1:

$$z = \frac{cr^2}{1 + \sqrt{(1 - (1 + k)c^2r^2)}} + \alpha_1 r^2 + \alpha_2 r^4 + \alpha_3 r^6 + \alpha_4 r^8 + \alpha_5 r^{10} + \alpha_6 r^{12} + \alpha_7 r^{14} + \alpha_8 r^{16}$$

where Z is the surface sag,

R is the base radius of curvature of the lens,

$c = 1/R$,

k is the conic constant,

α_i are coefficients on powers of r

and r is the radial lens position.

On page 8, kindly replace the equation beginning at line 13 with the following formula:

EQ. 2:

$$MTF(v) = \frac{(Max_i - Min_i) / (Max_i + Min_i)}{(Max_o - Min_o) / (Max_o + Min_o)}$$

Where:

Max_i = maximum image intensity

Min_i = minimum image intensity

Max_o = maximum object intensity

Min_o = minimum object intensity

On page 9, kindly replace the equation beginning at line 4 with the following formula:

EQ 4:

$$Z = \frac{0.61\lambda}{NA}$$

NA

On page 10, line 19, kindly delete the heading "Summary of the Invention."

On page 12, line 16, before the heading "Brief Description of the Drawings" kindly insert the following paragraph:

--Summary

This invention provides a portable single lens microscope that provides structure between the eye and the microscope slide, preferably including a single lens having an aperture optimized to attain the best image resolution, preferably including a focus mechanism, preferably including a slide holding and moving mechanism, and preferably including a slide position locking mechanism, or any combination of these structures and mechanisms. It includes methods for determining an optimum aperture size for a single lens microscope (and other uses) including a lens of any type, and methods for designing a single lens microscope lens system that provides superior image quality. A single lens microscope according to the present invention can provide substantial and unexpected imaging benefits over previous single lens microscopes and compound microscopes.--

On page 22, kindly replace the equation beginning at line 21 with the following formula:

EQ 9:

$$z = \frac{cr^2}{1 + \sqrt{(1-c^2r^2)}} + \alpha_2 r^4 + \alpha_3 r^6 + \alpha_4 r^8 + \alpha_5 r^{10} + \alpha_6 r^{12} + \alpha_7 r^{14} + \alpha_8 r^{16}$$

On page 32, kindly replace the equation beginning at line 21 with the following formula:

EQ. 10:

$$\Phi = \sum_{i=1}^N A_i \rho^{2i}$$

Where:

Φ = optical phase

A_i = coefficients on even powers of ρ

ρ = radial coordinate of lens